

MECHANICS' MAGAZINE,

AND

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VOLUME IV.]

FOR THE WEEK ENDING OCTOBER 25, 1834.

[NUMBER 4.]

Seventh Annual Fair
OF THE
AMERICAN INSTITUTE,
HELD AT NIBLO'S GARDENS,
October, 1834.

It is with no ordinary satisfaction that we again bring before the notice of our readers some of the most useful and important inventions, improvements, and displays of American ingenuity and industry, exhibited at this annual fete—an exhibition in every way honorable to us as a nation, and calculated by the competition it offers, and the rewards it bestows, to render us able in a short time to vie in all our manufactures and mechanical skill with any nation on the face of the globe.

America has great reason to be proud of her numerous institutions for fostering talent and ingenuity, her seminaries of learning, and her philanthropic institutions in every section of the Union, but to none will posterity be more indebted than the institution now under our notice. It promotes a taste for the cultivation of the arts and sciences—gives a spur to industry among all classes—and has been the means of bringing into notice individuals of modest merit, who without a similar institution would have known full well

“how hard it is to climb
The steep where Fame's proud temple shines afar,
How many a soul sublime,
Has felt the influence of malignant star—
And waged with fortune an eternal war,
Checked by the force of pride, or envy's frown,
Or poverty's unconquerable bar.”

It offers, too, by its annual exhibition, by the meeting of so many of the ingenious and scientific of our land, an opportunity for the interchange of ideas, which must afford them great gratification, and when guided by those feelings of patriotism which will ever be found predominant in the breasts of men of talent, must be productive of great benefit to our country.

We are gratified to learn that the number of visitants this year quite equalled that of any former one, and we most cordially wish

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that this, as well as institutions of a similar nature, may “go on and prosper.”—[Ed.]

LIST OF ARTICLES EXHIBITED.

Steam Engine and Sugar Mill—Cylinder, $2\frac{1}{2}$ inches bore, $4\frac{1}{2}$ inches stroke; walking-beam, $13\frac{1}{2}$ inches long, from centre to centre; connecting rod, $13\frac{1}{4}$ inches long; crank, for connecting rod, $2\frac{1}{4}$ inches long; fly wheel, 16 inches diameter; air pump next to cylinder; force pump in the centre; injection and feed cocks between the two centre standards; feed pipe from boiler to feed cock; boiler, 22 inches long, 13 inches diameter, of copper.

Spur wheel for sugar mill, 16 inches diameter; pinion, $1\frac{1}{4}$ inches diameter; 3 rollers and stands for sugar mill; rollers, $5\frac{1}{2}$ inches long, $3\frac{1}{4}$ inches diameter; the driving wheels for rollers are the same diameter from the pitch line as the rollers. This mill is connected with the engine by a coupling attached to the spur wheel, which works in the pinion attached to the fly wheel of the engine.

The Draught and Model of a Ship, 420 tons, drawn by C. G. Selfridge, of Boston, representing 4 different plans of the ship. 1st, Sheer plan, which represents the ship as looking upon her broadside; shows the place for the masts, the shape of the cut-water, rudder, &c.; also, of the section lines, diagonal lines, bearding line, throat of the floors, &c. 2d, A half-breadth plan, which represents the ship upside down, shows the shape of all the water lines; main and top breadth, &c. 3d, Square body plan, representing all the square frames of the ship in their proper shape and place, with the diagonal section and water line struck upon them, also the height and length of the main transom, with the upper and lower edge of all the other transoms, struck across the frames to lay them down in the half breadth transom place. 4th, Cant body plan, representing all the forward and after frames canted into their proper places, showing the shape of all the cants, and the fashion piece, the size of all the transoms, and the place for the heels of the cants in the dead wood. Dimensions of ship—126 feet on deck, 26 feet beam, 19 feet deep.

The model was made to order, or the beam would have 28 instead of 26 feet.

Likewise, the Model of a Steamboat, for sea, with spandings under the guards, for the double purpose of preserving the guards from the force of the sea, and making the boat more buoyant. Made by Selfridge. Dimensions—181 feet on deck, 24 ft. beam, 48 ft. from out to outside of guards, $10\frac{1}{2}$ ft. deep, wheel 22 ft.

Stoves, &c.

H. Nott & Co. 1st premium on anthracite coal Hall and Cooking Stoves—a silver medal.

J. L. Mott, 2d premium for anthracite coal Cooking Stoves—a diploma.

W. Naylor, 2d premium for anthracite coal Hall Stoves—a diploma.



Naylor's Newly Invented Hot-air and Self-ventilating Stove—an entirely new article, embracing principles which the inventor has never known to be applied to any other stove; they are recommended with the greatest confidence, and warranted to perform well in every respect, or no pay demanded. Heat can also be applied to other rooms from the same stove when required. The demand for them last year was greater than could be supplied in time, and they have undergone a very

great improvement this year, both in utility and appearance, which is a farther recommendation.

J. L. Mott, 1st premium for Office Stoves—a diploma.

James Wilson, 2d premium for Office Stoves—a diploma.

N. Whitman, 1st premium for Parlor Grates—a silver medal.

Edward Smylie, 2d premium for Parlor Grates—a diploma.

B. H. Folger, for anthracite Globe Stoves—a diploma.

F. Van Tassel, for a Cooking Stove—a diploma.

Joel Curtis, for a coal Cooking Stove—a diploma.

Richards & Damerel, Cooking and Office Stoves—a diploma.

Platt & Treadwell, Albany, Parlor Stove for wood—a diploma.

H. S. & J. S. Gold, 1st premium for Portable Bake Ovens—a diploma. This oven is constructed for preventing the loss of heat, being made double, (the material of tin or other thin metal plate,) with a distance between the two of from three quarters to an inch, so that between the two casings on the top, and on all sides, there may be confined air. This construction of the oven gives it firmness and durability.

The furnace is in the centre, between the doors or ends of the oven, passes through it, is put in at the top, and projects a little below the bottom. The fuel is put in at the top, which has a cover, (as represented in the first cut;) the draught enters (as represented in the same cut) in front, just under the bottom. The sides of the furnace are represented in the second cut, by the two lines near the centre. The circle represents the smoke or gage pipe, which ascends behind the oven. The furnace is about two inches thick, is nearly as wide as the oven, so that it divides it into two parts: it holds about eight quarts of coal, which is sufficient to bake at least *thirty-two loaves* of bread. To prevent the heat from operating unequally, there is a contrivance introduced for regulating the heat, by producing what is called by the inventor, "the circulation of heated air." Those several pieces running parallel with the furnace, and near it, represent a *vertical partition*, in so many pieces. The air between this partition and the furnace becomes immediately heated; it then rises, of course; and as each piece of the partition is set back towards the furnace a proportionable distance, (as is seen in the cut,) the heated air will enter between the several shelves and pass towards the door over the articles on one shelf and under those on the other, by which the heat will be absorbed, so that the air will become cooler when it reaches the door, where, by preponderance, it will ascend through the space (represented in the cut) to the bottom, when it will be re-heated, and so on. This contrivance for producing circulation has never before been known, and from this the oven derives its chief advantage, as it will operate equal.

Fig. 1.

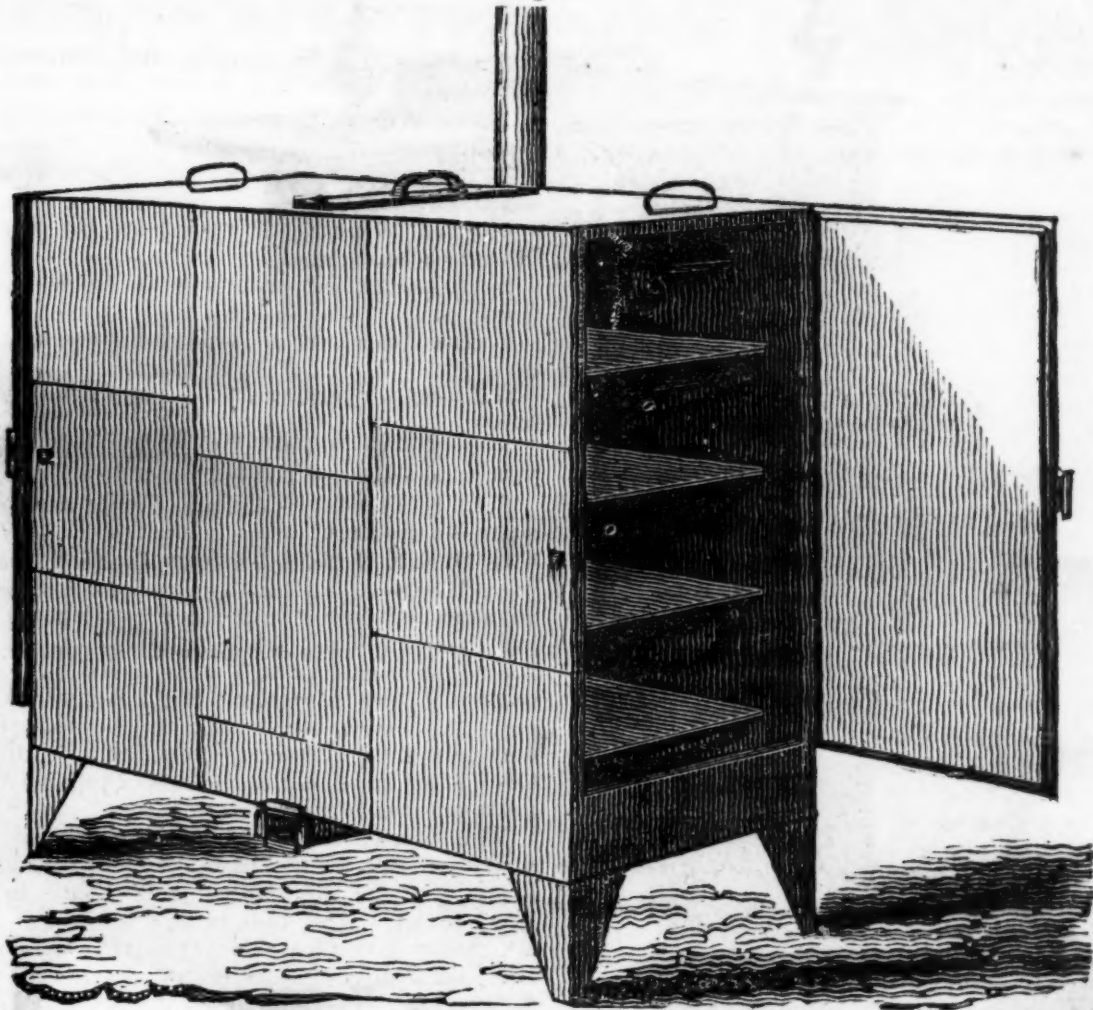


Fig. 2.

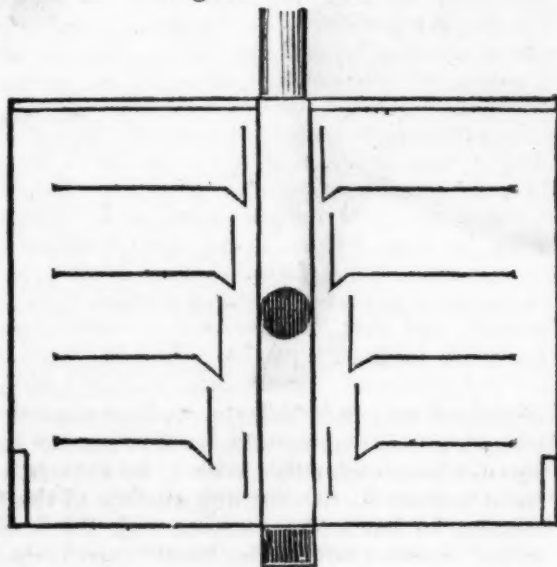


Fig. 3.



ly well, though several stories high. In this oven the lower shelf is made double, containing confined air. This prevents what is on the shelf from being burned at the bottom. It is made thicker the front side next to the door, so that its under side may be an inclined plane. The furnace is round, and is located under this shelf, entirely in the oven, except the part

which catches the ashes. The partition in this is the same as in the other. It will be seen that the heated air must be carried to the back side of the oven, where it will ascend as in the other, and the operation will be the same.

H. Nott & Co., 2d premium for Portable Bake Ovens—a diploma.



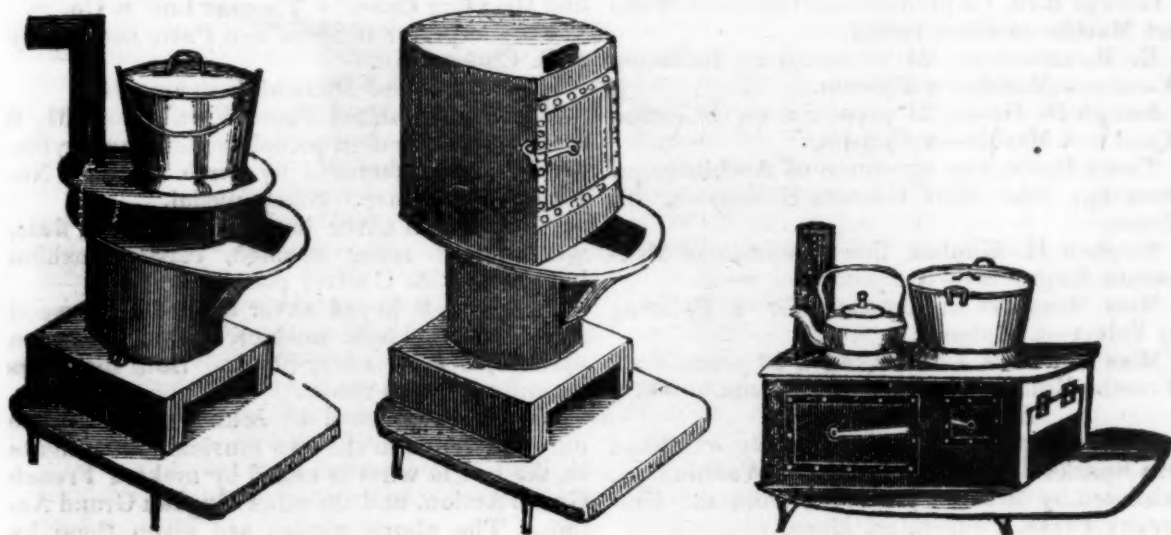
Naylor's Coal Cooking Stove, acknowledged the best article of the kind ever brought into the market. The demand having been extensive, and the improvements great this year, will be a further recommendation to it. The improvements are a greater increase and equalization of heat to the boilers, a greater facility in cooking, economy in fuel, and a total preventive of the dust arising from coal.

A Model of a Cooking Stove, invented by Dr. Payne, 13 Beekman st., New-York; quite novel in its operation. The grate, or furnace, in which the wood, or coal, is burned, turns horizontally under a shallow heat chamber, of a

circular form, on which the cooking vessels are placed, which enables the cook to put the most intense heat under the vessel, or vessels, that most require it, the burning surface of the fuel coming in immediate contact with the bottom of the vessels, whilst the heated air from the furnace, or grate, by an ingenious and compact arrangement, passes from the furnace under all the vessels, in a circle, before it escapes into the stove pipe, which is placed in the centre of the circle. The range, or grate, is so constructed as to afford ample and convenient room for roasting and broiling, without occupying a space more than 3 feet square. The stove may stand on legs, or be suspended.

Graham's Stove,—as represented by the subjoined cuts. We have before us several testimonials from persons who have had it in use some time, who all concur in stating that

it fully answers their expectations. It is cheap—simple in its construction—neat in its appearance—and economical as to the quantity of fuel consumed.



Cabinet Ware.

J. C. Jenckes, a Carriage Chair for an Invalid—a diploma. A very ingenious contrivance, by which sick persons are able to move themselves from room to room, and also alter their position of sitting.

A splendid Perspective Pier Table, inlaid with upwards of one hundred and fifty pieces of wood of different shades and colors, so arranged as to appear like solid blocks or boxes, in whatever position you may stand to view it; manufactured by Wm. Fulcher, No. 88 Elm street, New-York.

J. A. Patterson, fine inlaid top for Centre Table—a silver medal.

W. Woolley, for a Sofa Bedstead, made by E. S. Woolley, and Frieze Window Covering—a diploma.

J. H. Farrand, for Spring Window Blinds—a diploma. Mr. F. exhibited a figure of a Pagoda or Temple, made in the form of a hexagon—as a model intended to illustrate at one view, by revolving on its centre, blinds for windows, both on an improved principle, and of original invention, and classed under the following heads:

Inside spring blinds, adapted either for linen, transparencies, maps, &c.;

Sun shades for outside, made to suit different forms of windows, which effectually screen the rays of the sun, and ventilate the rooms in hot weather;

Dwarf Venetian blinds, with vertical movement, striped Venetian and falling hood;

The painted Venetian blind differs from the old plan, inasmuch as it has an extra lath revolving on two rollers, centred in the top lath, which hangs in a horizontal position, thereby preventing the line either to cut or slip from the pulleys, which being vertical to the holes in the slats facilitate the turning of the blind, besides effectually screening the rays of light.

Fine Arts.

Original Busts of McDonald Clark, the poet, and a Dead Infant, both sculptured by James V. Stout—silver medal.

These busts are stood on pedestals of the Scagliola marble, and are manufactured by Clark & Dougherty, 40 Hamersley street. They are, in point of strength, durability, richness of tint, vein and polish, fac similes of their originals, and what greatly enhances their value is the barrenness of the primitive quarries, among which are the lapis lazula, roseæ broccido, yellow antique, &c., and the cost is from one-sixth to one-third of their models.

J. W. Dodge, 1st premium for Miniature Painting—a diploma.

J. James, 1st premium for Stained and Burnt Glass—a diploma.

Smith & Crane, 1st premium for Wood Carving—a diploma.

Mrs. Springsteel, 1st premium for frosted embossed Flower Work—a silver medal.

Miss Harris, 1st premium for Shell Flower Work—a silver medal.

W. J. Hubard, 1st premium for Portrait Painting—a diploma.

Edward D. Marchant, 2d premium for Portrait Painting—a diploma.

J. W. Hill, 1st premium for water colored Landscape and Marine Painting—a diploma.

Miss E. Johnson, 2d premium for water colored Landscape Painting—a diploma.

T. Chambers, 2d premium for water colored Marine Painting—a diploma.

Noel Delregney, 1st premium for Oil Landscape Painting—a diploma.

Hyatt & Smith, 2d premium for Oil Landscape Painting—a diploma.

W. Eagleson, 1st premium for Sculpture in Marble—a diploma.

R. J. Brown, 2d premium for Sculpture in Marble—a diploma.

George Endicott, two Portraits of Daniel

Webster and Doctor De Witt, in Lithograph, a fine specimen of that art in point of execution and likeness—a diploma.

W. Thompson, 1st premium for Engraving—a silver medal.

George Bird, 1st premium on Imitation Wood and Marble—a silver medal.

E. Ramsbottom, 2d premium on Imitation Wood and Marble—a diploma.

Joseph De Groot, 2d premium on Imitation Wood and Marble—a diploma.

Town Davis, fine specimen of Architectural Drawing, (the New Custom-House)—a diploma.

Stephen H. Gimber, fine specimen of Mezzotinto Engraving—a diploma.

Miss Margaret Ackerman, for a Painting on Velvet—a diploma.

Miss Cornelia Loomis, aged 13 years, for 2 Wreaths Embossed Work—a diploma.

Books and Stationary.

The best specimen of Typography exhibited was Sparks' Life and Writings of Washington, exhibited by Monson Bancroft, from the University Press, Cambridge, Mass.

Second best specimen of Typography, Byron's Works, published by George Dearborn, elegantly bound by H. & H. Griffin.

Best specimen of Blank Account Books, exhibited by Wm. Minns; the ruling very neat and perfect, and the binding, particularly of two volumes, highly finished and in good style.

Second best specimen of Blank Books, by D. Felt & Co., four very elegant specimens, as to ruling and binding.

Best specimen of Book Binding; Books of Common Prayer, bound by L. Turner.

Second best specimen of Book Binding, by H. & H. Griffin.

Best specimen of Sealing Wax; a great variety of beautiful samples, plain and variegated colors, by D. Felt & Co.

Best specimen of Manufactured Quills, by D. Felt & Co.

Best specimen of Maps, by Mitchell, Philadelphia.

Second best specimen of Maps, by D. H. Burr, N. Y.; a large and elegant Map of the State of New-York, with Plans of the cities and most important towns in the State.

The following articles were worthy of particular notice:

Book of Common Prayer, published by R. Bartlett & S. Raynor, press of Wm. Van Norden, a very neat and beautiful edition.

The National Portrait Gallery, published by M. Bancroft, press of Wm. Van Norden. Although it may be thought that this work falls more immediately under the department of the Fine Arts, this committee cannot omit to notice, with high approbation, the style of its execution, which is highly creditable to the publishers, and a favorable specimen of the progress of the arts in this country.

Mitchell's Reference and Distance Map of the United States, exhibited by C. Mould, agent, 155 Broadway, is a work which merits particular notice for its correct and handsome execution, and minuteness and variety of detail. It

is accompanied by a volume (324 pages) of explanatory references, containing also a mass of important topographical and statistical information.

A fine specimen of Portable Writing Desk and Dressing Case, by Thomas Luff & Co.

Very superior Binders' and Paste Boards, by J. B. Cheeseman.

Music and Musical Instruments.

Rosewood Cabinet Piano Forte, No. 401, 6 octaves, with patent piccolo action, and cylinder fall, manufactured by Firth & Hall, No. 1 Franklin square. Silver medal.

One 8 keyed silver banded cocoawood flute, with patent roller springs, elastic cushion keys, and C & C silver plates;

Also, one 8 keyed silver banded cocoawood flute, with elastic cushion keys, common springs, C & C silver plates. Both the flutes manufactured as above.

Two Piano Fortes, by John Osborne. The only difference in the two musical instruments is, the one is what is called by makers French Grand Action, and the other English Grand Action. The above names are given them by way of classification or designation, as they are, in part, copied from those two nations, in their original mode of mechanism. Gold medal.

Bridgland & Jardine, 2d premium on Square Piano Forte—a silver medal.

Bridgland & Jardine, 2d premium on Cabinet Work, rose-wood Piano Forte Cases—diploma.

C. H. Eisenbrant, Baltimore, 1st premium on Flutes and Clarionets—a silver medal.

Rounberg & Schroeder, 2d premium on Flutes and Clarionets—a diploma.

C. G. Christman, for workmanship for an improved Flute—a diploma.

C. A. Eisenbrant, for a Brass Horn—a diploma.

G. Godene, for double Bass Viol—a diploma.

India Rubber Goods.

Captain L. Norcross' Water Dress—composed of a lead cap, which encloses the head, of 75 lbs. weight, and one foot in diameter, with a small glass in front, for the object of vision. The lower part has an opening, the edges of which rest on the shoulders and front and back of the chest equally.

The dress is made entire of India rubber cloth, with arms, gloves, legs, and feet, and made to fit loose. The end that joins to the lower part of the cap or helmet is made like the mouth of a bag. The operator draws it on whole, and then the upper part, or mouth, is tied close around the lower edge of the cap. Weights of lead are attached to the feet, of ten pounds each. From the top of the helmet there is a pipe as long as, or longer than, the water is deep, which the operator is going to work in, attached to an air pump. This is the air refreshing, or supply pipe; another pipe, from the helmet to the top of the water, is the discharge pipe. In the latter, there is a flat portion, about 6 inches long, made by stitching two flat pieces of sole leather together on the edges, situated about 6 inches from the helmet, and this constitutes the safety valve. On this valve, the pressure of the water acts so as to

prevent the escape of air from the dress, till the air, surrounding the body from the fingers to the toes, is more dense than the water, then a proper portion of the air escapes through the valve, and goes up to the surface, along the discharge tube.

Boston and Lynn India Rubber Company, 1st premium for India Rubber Goods—a silver medal. C. C. Nichols, 33 Fulton street, agent.

Also, from the India Rubber Factory, Roxbury, Mass. (warranted water and air tight)—

Ladies' India Rubber Camlet Cloaks; Gentlemen's Drab Pantaloon and Surtouts; Life Preservers; Silk Air Cushion; Ladies' Prunelle Shoes—a diploma. H. A. Winslow, 66 Maiden lane, agent.

Carriages, &c.

Isaac Mix & Sons, a very handsome Stanhope, with improvements in manner of putting on tires, worthy of particular notice; the rundle behind is well arranged for servant, or can be closed at pleasure—a silver medal.

Isaac Mix and Sons, one carriage, turn-over seat Stanhope, a well made and convenient article for a family. A diploma.

I. Cooke & Sons, one double seat Phaeton. This carriage is so constructed that it can be used as a barouche, with a top to close all round, or as a double seat Phaeton; by taking off the driver's seat and turning the front seat to face the horses, the top can be thrown down or removed at pleasure. A silver medal.

I. Cooke & Sons, a very handsome Buggy Waggon—a diploma.

Peter L. Donaldson, Newark, N. J., for Gig Axles—a diploma.

Gold, Silver, Plate, Jewelry, &c.

Mullen & Ackerman, for specimens of filagree jewelry—a diploma. W. J. Mullen, of the same firm, has been awarded a medal for two gold watch dials. Mr. M. deserves great credit for the perfection to which he has brought the American manufacture of this article. He was the first in this country to attempt their preparation, and now executes them in a style equal to any that can be imported.

James Thompson, 2d premium for Silver Pitchers—a silver medal.

Richards, 1st premium on Patent Spring Gold Spectacles—a diploma.

Robinson, Jones & Co., 1st premium for plain and fine gilt chased and fancy buttons—a silver medal. Attwater, Parker & Wilson, No. 8 Platt street, agents.

Ackerman's Lithometallic, or Jewel-pointed Pen, is a gold pen, with points made of a valuable jewel, and one of its peculiar advantages is that it cannot be corroded by ink, and may be used a long time without being at all injured or impaired by use.

After a little experience, a good writer will prefer it to the steel pen, as the ink flows more freely, and his hand-writing will be uniformly the same, and resemble more that of the quill pen. It is made portable for the pocket, and will be found, to persons travelling, a very useful and convenient article.

We defer (at the request of Mr. Williamson, the inventor,) giving a description of the new-

ly invented graduating silver steel pen, which received the premium of a gold medal.

Marquand & Co., 1st premium for Silver Pitchers, Spoons, and Forks—a silver medal.

Jared L. Moore, for fine specimen of Gold and Silver Spectacles.

Leather, Boots, Shoes, &c.

Sherill & Reed, Salisbury Centre, Herkimer county, 1st premium for hemlock tanned Sole Leather—a diploma. Thomas Brooks & Sons, agents, No. 60 Vesey street.

Quackenboss, Wynkoop & Co., 2d premium for hemlock tanned Sole Leather—a diploma.

W. Leek, 1st premium for oak tanned Sole Leather—a diploma. Isaac Bullard, agent.

F. K. Boughton, Utica, 1st premium for Otter and Seal Skin Caps—a diploma. For sale at 168 Water street.

J. W. Brodie, 1st premium for dressed Otter Skins—a diploma.

J. D. Williams, 1st premium on dressed Muskrat Skins—a diploma.

T. Lane & Son, 1st premium for Ladies' Boot and Dress Slippers—a diploma.

Alexander Clark, 1st premium on Gentlemen's Calf Skin Boots—a diploma.

S. C. Smith, fine specimen of lined India Rubber Shoes—a diploma.

J. G. Vandenburg, 33 Wall street, fine specimen of water proof Gum Elastic Boots—a diploma.

Cloths, Cassimeres, &c.

Denny Manufacturing Company, Oxford, Mass., 1st premium for superfine black and blue Cloths—a gold medal. Steele, Wolcott & Co., 62 Pine street, agents.

Middlesex Company, Lowell, Mass., 2d premium for superfine black Cloth—a silver medal. Steele, Wolcott & Co. 62 Pine st., agents.

Wethered & Brothers, Baltimore, 2d premium for superfine blue Cloths—a diploma. Steele, Wolcott & Co., 62 Pine street, agents.

Daniel Buck, Lawville, Lewis county, N. Y., 1st premium for American Saxony Wool—a diploma. Steele, Wolcott & Co., 62 Pine st., agents.

Wethered & Brothers, Baltimore, 1st premium for black Cassimeres—a silver medal. Steele, Wolcott & Co., Pine street, agents.

Middlesex Company, Lowell, Mass., 2d premium for black Cassimeres—a diploma. Steele, Wolcott & Co., 62 Pine street, agents.

Dick & Sanford, Newtown, Conn., 1st premium for Satinets—a diploma. Charles N. Mills, 44 Pine street, agent.

John Wilde & Co., Bloomfield, N. J., 1st premium for White Flannels—a silver medal. J. Wilde, No. 12 Gold street, New-York.

A. Robinson, Fall River, Mass., 1st premium for Prints—a gold medal. Brown, Brothers & Co., 63 Pine street, agents.

Louisdale Company, R. I., 1st premium for Nankeens—a diploma. Lawrence & Trimble, 51 Pine street, agents.

Paul M. P. Durando, 1st premium for Boys' Clothing—a diploma.

Horne, Shepard & Fisher, a piece of Bleached Cotton Flannel—a diploma. L. Holbrook & Co., 53 Pine street, agents.

Premiums or diplomas were also awarded for the following :

Wm. T. Willard, for Covering for Vault Grate—a diploma.

John Woolley, 1st premium for Roofing—a diploma.

E. B. Sweet, 2d premium for Roofing—a diploma.

Peck & Lannuier, 1st premium for Beaver Hats—a diploma.

A. & A. Bancker, 2d premium for Beaver Hats—a diploma.

J. M. Henderson, 1st premium for Silk Hats—a diploma.

Hyatt & Smith, 1st premium for Sign Painting—a diploma.

John M. Brown, 2d premium for Ornamental Sign Painting—a diploma.

J. F. Hanks, 1st premium for Ornamental Sign Painting—a diploma.

Judah A. Lee, 1st premium for Plain and Ornamental Penmanship—a diploma.

S. Andrews & Co., Perth Amboy, 1st premium for Combination Lock, invented by S. Andrews—a silver medal.

J. G. Pierson & Brothers, 1st premium for Wood Screws—a diploma.

T. & B. Rowland, Philadelphia, 1st premium for Mill Cross-Cut and Pit Saws and Shovels and Spades—a silver medal. Edward Field, No. 1 Platt street, agent.

Lewis McKee & Co., Plymouth, Conn., 1st premium for Chest and Cabinet Locks—a diploma. Atwell, Baker & Wilson, agents, No. 3 Platt st.

W. Hunt & Co., Douglass, Mass., 1st premium for Axes and Hatchets—a diploma. Agents, Hubbard and Casey, No. 48 Exchange Place.

Johnson & Co., 1st premium for Cosmetics, Fancy Soap and Perfumery—a diploma.

O. S. Williams, 1st premium for Travelling Trunk—a diploma.

R. R. Chamber, 2d premium for Travelling Trunk—a diploma.

R. H. Oldson, 1st premium for Hobby Horse—a diploma.

New England Crown Glass Company, first premium for Boston Crown Glass—a diploma. Charles Goff, 164 Maiden lane, agent.

B. Bosch, 1st premium for Secretary Book Case & Standing Mirror—a silver medal. Joseph Titcomb, 196 Broadway, agent.

Lowell Company, Lowell, Mass., 1st premium for Hearth Rugs—a silver medal. Stone, Swan & Mason, Pine street, agents.

Powers & Co., Lansingburgh, 1st premium for Oil Cloth—a diploma. T. L. Chester & Co., agents, Broadway.

Charles Attwood, Middletown, Conn., 1st premium for Metallic Pens—a diploma.

A. Denslow, Hartford, Conn., 1st premium for Card Wire, manufactured at the Rainbow Mills—a diploma. John Whittemore, 66 Frankfort street, agent.

William Field, for Vertical Trip Hammers—a diploma.

J. C. Stevens, for a model of a Fire Engine—a diploma.

Bollen, Pollard & Co., Hartford, Conn., for specimens of Box Wood and Ivory Rules—a diploma. Pettibone & Long, No. 4 Liberty street, agents.

Mr. Thompson, 1st premium for Paste Blacking—a diploma.

Wm. Sturdevant, 1st premium for purified Sperm Oil—a diploma.

W. Woolley, first and second premiums for two Surgical Bedsteads—a gold medal. For a full account of this valuable invention see p. 74, vol. iv., of this Magazine.

Dr. Leo Wolfe, third premium on surgical bedsteads—a diploma.

R. & E. Orrell, Providence, R. I., first premium on Weavers' Reeds—a silver medal.

Blake & Brothers, New-Haven, first premium on Escutcheon Latches—a diploma.

N. Hooper & Co., Boston, first premium on Mantel and Astral Lamps—a silver medal. John Nye & Co., 30 South street, agents.

C. Cornelius and Sons, Philadelphia, second premium on Mantel Lamps—a diploma. P. N. Haughwout & Son, 609 Broadway, agents.

M. Lefoulon, fine specimens of Stone Ware—a diploma.

L. Decasse, fine specimens of Fire Brick and Pipes, for conducting water, manufactured at the Salamander Works—a diploma.

Lowell Company, Lowell, Mass., fine specimen of Venetian Stair Carpeting—a diploma. Stone, Swan & Mason, Pine street, agents.

Norwalk Felt Co., Norwalk, for Felt Carpeting and Rugs—a diploma.

P. Luff & Co., fine specimen of Portable Writing Desk and Dressing Case—a diploma.

William Fulcher, splendid inlaid Centre Table, made of American wood—a silver medal.

R. J. Brown, an elegant Marble Centre Table—a silver medal.

Underhill & Ferris, a beautiful Cararra Marble Fireplace—a silver medal.

R. Heinisch, Patent Tailors' Shears—a silver medal. J. Andrews, 147 Fulton street, agent.

T. Thomas, for Painting on Glass—a diploma.

Isaac F. Bragg, fine specimen of Penmanship, sent in for exhibition only—a diploma.

A. Macklin, fine specimen of Embossing from Brass Cylinders—a silver medal.

D. Berrien & Co., for superior Smith Bel- lows, Fancy Brushes and Bel- lows—a diploma.

E. & J. Fairbanks, a Concentrated Plat- form Scale—a diploma.

J. M. D. & T. W. Keating, 3 small mod- els of Steam Engine—a silver medal.

G. Hodges, Andover, Mass., for Flannel made in imitation of Welch—a diploma. Stone, Swan & Mason, agents, Pine street.

J. B. Cheeseman, fine specimen of Paste- board—a diploma.

Thomas Godwin, fine specimen of Gild- ing on Glass—a diploma.

Esther R. Cobb, Wrentham, Mass., a very fine specimen of a Lady's Hat, made of rye straw—a silver medal.

Henry Keep, 2 fine specimens of Fancy Tuscan Bonnets—a diploma.

A & S. White, a very handsome specimen of Tuscan Hats, made of foreign materials—a diploma.

F. A. Kipp, & C. Cordes, fine specimen of Starch—a diploma.

Mrs. S. Little, a splendid Feather Bonnet, made of Poll Parrot Feathers—a silver medal.

Sebastian Jaclard, for Wigs, Toupees, &c.—a diploma.

Samuel Judd, for specimen of Spermaceti Candles—a diploma.

J. A. Riell, for specimen of Macaboy Snuff—a diploma.

Miss Mason, for specimen of Bead Bag—a diploma.

Miss Clark, several elegant specimens of Worsted Flower, and other ornamental worsted work, together with some handsome specimens of Drawing—a diploma.

Miss L. A. Browere, fine specimen of Wax Fruit and Flowers, and a pair of Transparent Blinds—a diploma.

Miss B. Van Tuyl, a specimen of Gilding on Velvet, and a Landscape Painting in oil—a diploma.

Miss Lucretia Fordham, Brooklyn, aged 14 years, a pupil of the Mechanics' School, a specimen of Worsted Embroidery—a diploma.

W. Williams, a pair of Worsted Lamp Mats—a diploma.

Miss Ann Eliza Constantine, aged 12 years, a pupil of the Mechanics' School, a piece of Shell Embossed Work—a silver medal.

Japanned Ware, exhibited by J. Smith & Son, Nos. 217 Water and 244 Grand streets, to show that Japanning can be and is brought to as great perfection in this country as in the old; and secondly, that the said persons do manufacture japanned goods to compete with the imported; and, thirdly, that old goods which have been in use for many years, so that the japan is almost, or altogether, worn off, can be, by them, (and they are the first that have done it in this city,) be made equal to new. 2d premium—a diploma.

T. Ternan & Co., 1st premium on Japan Ware—a diploma.

F. Reynolds, specimens of Plain Needle Work—a diploma.

Miss Mallison, fine specimen of Wax Flowers—silver medal.

Miss Sarah Maria Street, New-Haven, aged 13 years, one Chair Seat, an elegant specimen of embroidered Canvas—a diploma.

Mrs. Cooke, of New-Jersey, two Shell Boxes, one pair Shell Vases, and one Shell Watch Stand—a diploma.

Miss Thompson, two vases, fine specimen of Wax Flowers—a diploma.

Miss Margaret Fanshaw, a Bed Quilt, containing 16,800 pieces—a diploma.

Mrs. W. R. Addington, a Shell Wreath and Box—a diploma.

Mrs. Baldwin, a Shell Basket—a diploma.

Lorinda Lydaback, a fine specimen of Blue Silk Vest—a diploma.

Robert Ward, fine specimen of Carving, Butcher, and Cook's Knives—a diploma. J. Andrews, 147 Fulton street, agent.

J. Russell & Co., Greenfield, Mass., fine specimen of Socket Chisels—a diploma. Edward Field, No. 1 Platt street, agent.

Edwin Ellis, Attleborough, Mass., Brass Butt Hinges—a diploma. Atwater, Baker & Wilson, No. 8 Platt street.

D. E. Delavan, fine specimens of brass Stair Rods, brass and copper Coal Hods, brass Tea Kettle and Stand—a silver medal.

Wm. Morgan, an ingenious Pocket Pistol—a diploma.

F. W. Widman, Philadelphia, case of splendid Swords—a silver medal.

Timothy Dwight & Son, New-Haven, specimens of Screw Augers—a diploma. Ibbotson Brothers, 242 Pearl street, agents.

Ewin & Heartte, Baltimore, for excellent specimen of Leveling Instruments, and improved Leveling Instrument and a Theodolite Compass—a silver medal.

Wm. J. Young, Philadelphia, for excellent specimen of Railroad Goinometer, an improved Compass, and a Level Goinometer—a silver medal.

John Roach, a fine Barometer, Thermometer, and Hydrometer, in one vertical column case—a silver medal.

Henry Cooke, for a Drill Breast-plate, with a Swivel—a diploma.

U. S. West, for a Bottle Faucet, for tapping a bottle without drawing the cork—a diploma.

N. J. Williams, for Weavers' Shuttles and Reeds—a diploma.

Jeremiah Dodge & Son, fine specimen of Wood Carving, two Stanchions for a Fire Engine—a silver medal.

Wm. E. Stoutenburgh, for a four-light Suspended Lamp and twelve-light Chandelier—a silver medal.

E. S. Scribesure, a centripetal Power Press—a diploma.

O. Parker, for Hydraulic Cement for making durable Cisterns and large Stone Vessels—a gold medal.

Eaton & Gilbert, Troy, a very fine Omnibus—a diploma.

E. & S. S. Rockwell, Patent Vault Light—a silver medal. [See page 91.]

Fredericks & Smith, for a splendid French Chair—a silver medal.

Robert Usher, two fine specimens of Spiced Beef—a diploma.

Delano & Sons, good specimen of Iron Chests—a diploma.

W. B. Green, good specimen of Iron Chests—a diploma.

F. Fossard, for a piece of La Fayette Blue Cloth, a dye substituted for Indigo—a diploma.

Aaron Gilbert, New-Lebanon, one box of Shakers' Herbs—a diploma. Rushton & Aspinwall, 86 William street, agents.

Mrs. Jessie E. Paul, for fine specimen of Cotton Fruit—a diploma.

Miss A. Lewis, for a piece of Embroidery on Canvas—a diploma.

Samuel Allen, one bale of Hemp, raised at Copenhagen, N. Y.—a diploma. Peter Remsen & Co., No. 109 Pearl street, agents.

S. N. Brewer & Brothers, Boston, for speci-

men of Lozenges. D. & E. L. Perkins, No. 9 Courtland st., agents.

Robert G. Lamphier, Washington city, D. C., for a fine specimen of Seal Engraving—a diploma.

Mr. Charles G. Christman, improved twelve keyed Flute, manufactured at 398 Pearl street, New-York.

The Rev. William Fisher, Meredith, Delaware county, N. Y., specimen of refined Maple Sugar—a diploma.

Refined Sugar, exhibited by H. & J. Stuart—a diploma. Without exception the most excellent and finest sugar that ever came under our notice. We recommend to all house-keepers to examine it for themselves, and we are satisfied it needs no other recommendation. Ladies particularly, will find it a valuable appendage to the tea table, as well as for other domestic purposes.

Madam Doyley, fine workmanship one pair Corsets—a diploma.

Specimen of a Straw Hat, from the manufactory of J. D. Cobb, Wrentham, Mass. The fabric is rye straw, of Wrentham growth, braided by Miss Adeline Pond, and sewed by Mrs. Esther R. Cobb. Its fineness cannot be sur-

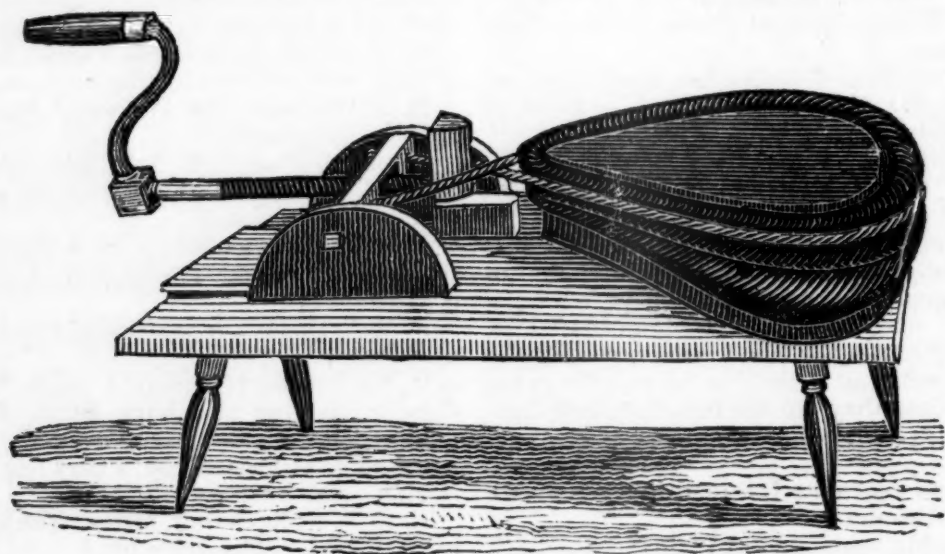
passed. It is a beautiful specimen of American enterprize and industry.

Fancy Glass Working, Blowing and Spinning, by W. J. Hanington, of the American Museum and 450 Broadway.

Birds and animals were made to resemble life; also pans, globe vases, decanters, segar tubes, pipes, glass plumes, and various other articles, formed at the blow-pipe of the glass while in a state of fusion, in the presence of the company. The process of glass blowing in all its varieties, at intervals blown finer than leaf gold, when it bursts with the report of a pistol, forming a shower of glass, frosting, tinted with all the various prismatic colors; glass spinning, on a wheel of multiplying power; by this process red hot glass was spun at the rate of 1000 yards a minute; specimens of ribbons were shown, manufactured from this material; glass balloons, in jars, made repeated ascensions; pulse and spirit glasses, together with philosopher's or water hammer.

H. J. S. Hall, best specimen of Fire-Works—a diploma.

Nathan Post's Patent Hame Collar Blocks, manufactured and sold by Francis S. Lane, No. 279 Bleecker street, New-York.



These patent blocks and rights may be had at the place above mentioned, or at the store of Henry Storms, No. 179 Water street, corner of Burling slip, where one may be seen constantly in use. The proprietor of this invention takes pride in offering it to the trade as one of the most important discoveries in crimping and perfecting the hame collar, both with regard to saving labor and producing accuracy of form, that has ever been the subject of a patent.

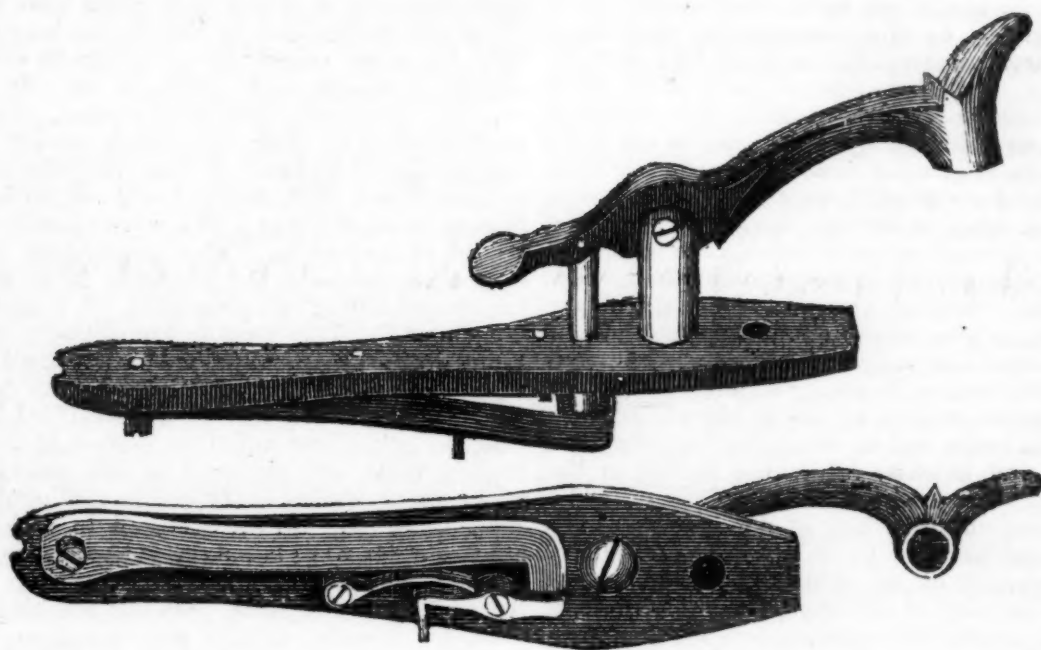
"I hereby certify that I have used one of the above mentioned blocks for shaping hame collars, and find it to be a great labor saving machine, which overcomes the great difficulty heretofore experienced in making collars, both for the ease of the horse and a sufficient bed for the hame, and I do not hesitate to say that it is particularly worthy the notice of manufacturers. HENRY STORMS, Saddler."

[The above is doubtless important, particu-

larly when we consider the pain and injury inflicted on horses from the use of ill-shaped hames.]

We have seen a Gun Lock,* invented by a sporting gentleman of Virginia, with which we are much pleased, and, if we are not mistaken, it will supersede the percussion lock now in use. It is styled the "Lateral Percussion Lock," and differs from the lock now in use in having a hammer that plays lateral to and parallel with the barrel on the tube, which is introduced precisely where the touch-hole of a flint gun is usually placed. The interior construction is remarkably plain, not half so complex as the common lock. By the lateral hammer, the upright cock of the flint and the hammer of the percussion gun is entirely done away with:

* These were intended to be exhibited at the Fair, but arrived in New-York too late.



consequently, the top or upper surface of the barrel presents a smooth and perfectly even appearance. Sight in the flying shot is much more accurately taken by this means, in consequence of the absence of the elevated cock. The facility with which the flint gun can be altered to the percussion is another very great advantage arising from this improvement. The gentleman has promised us a more particular description of the lock, which will be hereafter inserted. [See engravings above.]

Ne-plus-ultra, or Mississippi Life Boat, invented by Daniel M. Toll, M. D. of Schenectady. The object and use of the boat being determined upon, ought to govern its dimensions; the hull of one boat is to be constructed of the requisite dimensions, that is to say, of proper width, length, and depth, whose sides, between the curve where the bow commences and the curve where the stern commences, are to be a perfect longitudinal parallelism; her sides, in a vertical direction, are to observe a curvilinear line—they are to be, in other words, a perfect arc of a circle. A cross section of the hull is to be a circular zone, the longest cord of which is to be the transverse line of her deck, and the shortest cord to be the transverse line of her bottom; her bow and stern are to be shaped and modeled in such a manner as will give her, when in motion, the greatest possible relief from positive and negative pressure. Her deck and bottom are to be pierced or perforated with a series of openings, in a lineal direction from bow to stern, of a magnitude in her deck to receive the largest circumference of a hollow sphere or globe, and in her bottom of such diminished dimensions as to receive only a segment of the same globe or hollow sphere. Bulkheads are to be constructed perfectly water tight within her hull, that is, between her deck and bottom, and to join close all around upon the margin of the perforation which is in the bottom

of the boat or hull, and carried up and joined close on and all around the margin of the perforation in the deck: this bulkhead is to be shaped as to assume a globular form, and to encompass and give facility for a globe to revolve, which is to be suspended in its chamber: the residue of the perforations and chambers, for the reception of the globes, are to be finished in the same manner: the residue of the whole remaining part of the boat or hull is to be divided off into compartments by perfect water-tight bulkheads: next, a requisite number of hollow globes or spheres are to be made, and of a proper magnitude, mounted with iron axletrees through their axis, and the ends sufficiently projecting to answer for gudgeons; these globes, so mounted with their axletrees, and perfectly water tight, are to be suspended in the above mentioned chambers, fastened and secured in sockets or boxes in a workman-like manner, and with a segment of the globes projecting through the orifice in the bottom of the boat or hull, so that the globes may revolve with facility, to enable them to carry the boat over the shoal or bar with facility; this one boat or hull, now considered finished, another, of the same dimensions, and built every way in the same manner, is to be placed by her side and parallel with her, and at a proper distance: these two twin boats are to be connected with suitable cross-beams and timbers, supported a sufficient height above deck with stanchions, and the whole well secured with proper braces and fastenings in a workman-like manner, the whole of which will constitute the float or bottom of my boat.

The above described boat is intended should be built either of iron or of wood, or of iron and wood combined, or of any other material; she is intended to be used for passage or freight, or any other use that any other boat is used for, and she is intended to be moved by any tractile or motive power. And further—on the above

float or bottom of my boat, a superstructure is to be erected, as fancy or necessity may direct or dictate. And again, it is the intention of the inventor, that the stern of each of the twin boats should be carried back the requisite length, in imitation (or nearly so) of an eel's tail, so as to give her run a clean, smooth exit, with the least possible distress from negative pressure when in motion; her bows are to be carried forward so as to assume the most elegant tapering form, thereby enabling her to separate the resisting particles in the most easy manner, to give relief to positive pressure.

The invention and improvements herein contemplated consist in giving additional security to my water wheel, by being placed between the twin boats, and by obtaining buoyancy and speed, and likewise by giving facility to the crossing of shoals or bars in shallow water by the rolling and revolving of the globes on their axles, and likewise by securing and retaining the buoyancy of the whole of the uninjured part of my boat as a compensation for the loss of that part which might be pierced or penetrated by the impetus of a snag or any other substance.

The objections that may be raised or suggested to her speed, in consequence of the projections of her globes through her bottom, will yield on the least reflection, for as soon as the resistance amounts to the sum of the friction on the axletrees, the globes will revolve and thereby relieve the resistance.

And again—the apprehension that may be had on the score of resistance from the small and slender sheets of water that will be standing around the globes in the chambers, will as readily vanish by reflecting that the cohesion of water is merely nominal.

Observations.—This boat may be built and used without either globes or compartments, where there is plenty of water and no danger of having her hulls pierced or perforated. Again, she may be used with or without her globes, with or without her compartments, or any other way, as the case may require.

Account of a Visit to Mexico.

XALAPA, U. S. MEXICO, June 28, 1834.

To the Editor of the *Mechanics' Magazine*:

DEAR SIR,—You will recollect that we sailed from New-York on the 21st ult. for Vera Cruz. Nothing worthy of note occurred until the 2d of June, at which time we came into contact with a *water spout*, lat. $29^{\circ} 3'$ north, long. 74° west from Greenwich. The cabin passengers were below at breakfast. The second mate, who had charge on deck, gave us a sudden alarm, by hastily reporting at the cabin gangway, "A water-spout off the weather-bow, sir!" Those of us who were aware of the dangerous consequences of coming in contact with one of these aerial missiles of destruction, immediately arose from our seats and ascended on deck. Here we beheld a meteor, grand and beautiful indeed. It approached us in all its elemental grandeur, towering to the clouds, and looking down to scorn the power of man. Its dis-

tance from us, at this period, might have been about two miles, and, as the breeze was very light, we were completely exposed to its effects in case it should make towards us. It was watched attentively for a few minutes, when it was observed to settle very much, and, it was supposed, had broken. It was also judged that its course was such that it would not strike us in case of its renewal. We were shortly convinced of our error. The passengers were scarcely re-seated at the breakfast table, when the second officer again reported, "It is making for us, sir!" The captain immediately went upon deck, and in an instant after cried out at the top of his voice, "All hands on deck; passengers on deck to lend a hand!" I have said the wind was light; moreover, it was a leading wind, and previous to our seeing the water-spout, we had every sail set that could be made to draw. On the first call to deck, the studdin'-sails were taken in, so that, at the last call by the captain, we had all other sails set, from royals downwards. On our reaching the deck the dreadful missile was not more than 100 fathoms from us. It had renewed its former height and magnitude, and came booming on at our devoted craft with a loud rushing noise, in all its terrific grandeur, threatening us with instantaneous destruction. To clue up sails was impossible, therefore every thing was "let fly," sheets, halyards, &c. All was now done that could be done. The state of suspense and intense anxiety for a few moments is more easily conceived than described. Some were at prayer, audibly or otherwise, and all were motionless. It came upon us midship, the first contact heeling the vessel to the leeward. When about half over, the vessel righted, and when it left us it gave us a heel to the windward. Not a sail was rent nor a spar carried away. Not a man was injured, neither did a drop of water fall on deck.

Previous to the water-spout reaching us it was thin—in fact, was easily seen through; but after it had passed, it seemed to increase in density and opacity; hence, agreeably to the best received theory, it is probable that the water-spout, at the time it struck the vessel, had not been in its renewed state (before alluded to) a sufficient time to have become mechanically charged with water, otherwise it would have burst upon us and inundated, if it had not destroyed us. The diameter of the spout at the bottom was about forty feet, and it was very attentively and closely observed as it approached. That it had all the characteristics of a whirlwind is certain, and the spray which was thrown off *tangentially* from its exterior showed most conclusively that it gyrated in a *spiral* form, its motion being upward, thus raising water upon principles somewhat resembling those of Archimedes' screw. Its revolution was against the sun—i. e., from right to left. I do not mean to have it understood that I am by any means *convinced* that the water in these meteors is always *raised*; it may, and probably does, sometimes descend from the clouds. When the water is raised mechanically from the ocean, it will be salt;

when it descends from the clouds it will be fresh; but we have so few authentic accounts of their *bursting on the ocean*, that I am inclined to the belief that they are neither more nor less than whirlwinds raising sea-water the same as they raise objects upon the land.

This spout was first seen at half past 7 A. M., and at this time the barometer was one-eighth of an inch lower than it was an hour before. Just previous to our contact, the barometer had fallen an additional eighth of an inch, and immediately after the spout had passed us it was the same. An hour after the last observation, the barometer had ascended to the same height which it had previous to the appearance of the spout.

The aspect of the heavens was cloudy, somewhat broken, but having little motion. Some of the clouds were more elevated than others, the cumulo-stratus and nimbus of Howard. No rain had fallen during the morning.

The following statement will exhibit at one view the states of the barometer and thermometer during the interval of time included in the above account, viz.:

	Barometer. Inches.	Therm.
At half past 6 A. M. - - -	29.75	71°
When the water-spout was first seen, at half past 7 A. M., 25 to 30 minutes before striking us, - - - - -	29.625	70.5°
Just previous to the spout's stri- king us - - - - -	29.5	—
Immediately after do. do.	29.5	70°
One hour after the last observa- tion, - - - - -	29.75	71°
In the third observation the thermometer was not noted for want of time.		

The above is only a slight additional proof of the immense value which the barometer has for purposes of practical navigation. It is true that experience and prudence in commanders of vessels often preserve them in dangerous circumstances by taking the necessary precautions, but this is no reason why every additional security should not be given to the lives and property of our seamen and merchants. Every vessel which traverses the ocean should have an accurate barometer, which should be carefully and punctually attended to, and registered in the log book.

Our passage through, or rather across, the gulf or bay of Mexico, was tedious and unpleasant, a remark that will apply to the whole passage from New-York to Vera Cruz; the weather being very warm, and our accommodations on board very much limited. I have heard the splendor and beauty of the tropical skies extolled so much and so often, that I took it for granted I was to have a feast of vision which would in some degree compensate for the inconveniences of an imprisonment of many days upon the domains of Neptune. But, alas, disappointment came. There is infinitely more splendor and *elasticity* (if I may be allowed the expression) in our northern skies, particularly in a clear November night. It is true, we see some stars in tropical climes which

are not visible to us at home; but there is a lassitude, a certain *je ne sais quoi*, that takes away all the zest for me.

On the 18th of June, we entered the harbor of Vera Cruz, very much to our gratification. I believe few persons could be found who would not prefer terra firma to the deceitful and treacherous gulf of Mexico. After having undergone an inspection by the visiting surgeon, and he having ascertained that there were no cases of cholera among us, the Vera Cruzans being very apprehensive of another visit from this Protean disease, we were permitted to land. Some of us had been unwell for a few days previous, owing to our having been becalmed and exposed to excessive heat for some days in the gulf. We were moreover informed that there were cases of vomito in the city, and therefore determined to remain on board a day or two, until we should become in a slight degree, at least, acclimated.

At sunrise the next morning, a scene, novel and very interesting to an American, presented itself to our view. The atmosphere was unusually clear and transparent, and a gentle sea breeze gave it a wholesome and grateful feeling. Directly in front of us lay the antique and ruinous looking city of Vera Cruz, with its gorgeous domes, and structures of various appearances, and architecture, mostly partaking of the Moorish style. In our rear lay the castle of San Juan de Ullua; on our left the mountain of San Martin, reaching to the clouds, with other mountains; and islands and bays of greater or less extent. In some of these bays, at a distance of from one to three miles, many fishing boats were to be seen, the crews of which seemed to be busily employed in their avocation. In a south-westerly direction the Orizaba, 17,400 feet in height, rose in all its majesty, its snow-capped summit poising its everlasting congelation far above the access of man. The rays of the rising sun were reflected from this peak in the softest roseate hues conceivable.

At the expiration of two days on board, we landed at the Mole, and, having passed the custom-house without difficulty, took up our abode at a very neat and comfortable house, kept by Mr. Wm. Fulton, an American, whose politeness and attention are well calculated to insure custom, and give general satisfaction.

Vera Cruz is a regularly laid out city, its streets running at right angles to each other, and most of them are of a spacious width; some of the cross streets are, however, narrow and filthy; in fact, much could not be said in praise of the cleanliness of any part of the city which we saw. The number of dead, and, of course, putrifying animals, and other filth, which lie in different parts of the city, would vitiate and render the atmosphere unhealthy in a much higher latitude. The streets are well paved and have wide side walks, which are formed of a cement made with lime, sand, and shells, which acquires a peculiar hardness, and is very durable. I do not know that any particular proportion of these substances is required, and am inclined to believe the judgment of the ma-

ker is the guide. The houses of this city have all of them flat roofs, and are covered with cement; particular pains are taken to keep them perfectly clean, in order to preserve the purity of the rain water, which runs from them into large cisterns.

The public buildings of Vera Cruz consist of a palace, in which are the Government House, prison, &c., a custom-house, several churches, one or two convents, a theatre, hospitals, barracks, and some few others of minor importance. The public square, or plaza, is sufficiently spacious, but far from being elegant or attractive in any particular. It has on the north side the Palace, an ordinary looking building; on the east, the Cathedral, an old building of mixed architecture, principally Moorish; on the south and west, ranges of buildings having dwellings above and shops under the piazzas or "portales," below. The dwellings are generally commodious, having large, high, and airy apartments. Some of them are elegant, having towers or turrets on their roofs, admirably adapted for enjoying the sea breeze, a luxury inappreciable in latitude 19° 11' north.

The increasing prevalence of that dreaded disease and scourge of this place, the *vomito*,* (a disease differing somewhat from the yellow fever of the United States and Havana,) and the oppressive heat and danger of exposing ourselves to the sun, compelled us to limit our excursions and examinations more than we desired. During the time we remained in the city, the average height of the barometer was 29.96 inches, and that of the thermometer, in the shade, 87°. The thermometer is often at this elevation in midsummer in New-York, but the heat of the sun is not near so oppressive as at Vera Cruz. In the cool of the evening, however, we sometimes ventured upon a ramble. The great place of resort for the Vera Cruzans, (the "Battery" of Vera Cruz,) is the Mole, which is now in a very dilapidated and decaying condition. It is said that its repair has been in contemplation for a long time. One thing is certain—if not soon repaired, it will be totally destroyed. But the climate of Mexico in these parts is admirably adapted to the production of procrastination among its inhabitants: "Manana," (to-morrow,) is the word with them. The Mole, as it is, is invaluable to the citizens of Vera Cruz, it being a place to which they resort for enjoying the sea breeze, social chit-chat, and the burning of tobacco, which both sexes are in the habit of doing in their mouths.

The public walk, "Alameda," lies in a southeasterly direction from the city, commencing at the eastern gate and extending about a third of a mile in an easterly direction. This, at some former period, must have been a beautiful, spacious, and shady promenade. Some few of the trees which were planted in rows on each side, are still standing. The way between

these rows is well paved, and stone seats of a neat construction and appearance are placed along, at intervals, on the sides, for the accommodation of the promenaders.

The defence of Vera Cruz, in a military point of view, is very strong. The principal fortification is the castle of San Juan de Ullua. This is situated on an island to the northward of the town, distant about half a mile. It appears to be the well constructed work of skilful and competent engineers. It has a fine armament of cannon, mortars, &c., immense tanks for holding water, and can garrison 3000 men. It is a quadrangular fort, with four bastion fronts, one of which, the south-western, is bounded by the water of the harbor, having a depth of five fathoms close to the wall. On this front, large ring bolts are inserted and secured in the wall for the purpose of mooring shipping, to protect it from the violence of the *norther*s, violent hurricanes peculiar to the gulf of Mexico. The other three fronts are bounded partly by the water of the harbor, and partly by a deep and wide ditch or moat covered by a glacis. This work is said to have cost about *thirty-five millions of dollars*! Report says that the King of Spain, when informed of its cost, went to his palace window, in Spain, to look at it, observing, that a fort which cost so much ought to be visible from all quarters of the globe. A similar work in the United States would cost about \$600,000.

The population of Vera Cruz does not probably exceed five thousand souls at the present time. The former population is said to have been from 13 to 15,000, when it had a flourishing commerce. The causes which have contributed to this retrogression are various and evident: 1st, The unsettled and insecure state of its commerce during the first and succeeding revolutions and internal commotions, which have existed in a greater or less degree for the last fifteen years; 2d, The insalubrity of the climate is so great, that foreigners and others will not risk an exposure in it without comparative inducements, and no other inducement can generally exist than that of acquiring wealth, and since the accomplishment of this is almost entirely dependent upon a flourishing commerce, it follows that whatever is detrimental to this branch of human industry, is also detrimental to the prosperity of the city. Since the establishment of the present form of government, the duties are so onerous as to crush what ought to have been supported and fostered, and the immoral tendency of *smuggling* is thereby introduced. But it may be urged in reply, that the expenses of a newly formed government of a young nation, which has just thrown off the yoke of bondage, must be borne and obtained in such a way that the people may be least sensible of it. This may be true; but if the people are not sufficiently intelligent to know what most promotes their prosperity, they are hardly fit for a republican form of government. The ruinous effects of the retrogression of commerce upon this city cannot escape the casual glance of the stranger.

* The remedy most relied upon and universally used for this disease, is large doses of lime or lemon juice and sweet oil, repeated until an operation is produced.

The harbor of Vera Cruz is objectionable on many accounts, but it might be greatly improved. Vessels are now obliged to discharge by means of lighters or launches, and they are much exposed to the hurricanes called northers, which come in with great violence from the north and west. The construction of a breakwater from the westernmost point of the reef, about half a mile to the northward of the castle, could easily be effected, and would render the harbor comparatively secure and safe.

The soil in the vicinity is mostly sand and unproductive, consequently vegetables bear a very high price. The market, however, is tolerably good.

This place will always be memorable in the history of this country, it being the spot upon which that celebrated conqueror and most extraordinary man, Cortez, landed with his army in 1519.

On the 24th June we left Vera Cruz on our journey for the city of Mexico. Our road for the day lay partly over a level sand beach, and partly through bushes and hillocks of sand. It was excessively warm, the thermometer being at 102° in the shade, the sun nearly vertical, no breeze, and the reflection from a loose sand striking into our faces was very annoying. Add to this, we could proceed in a moderate walk only, and were obliged to stop at the end of every five or six rods to allow our horses to rest. For the last three miles of this day's journey, the vegetation on each side of us was luxuriant, and in all its tropical beauty. The trees were, many of them, of a good size, and all clothed in verdure. Large and excellent limes were hanging from branches frequent on both sides of us, and many of the trees were nearly invisible, being covered with a lichen or moss, resembling the mistletoe, the fibres of which hung from the tops of the trees reaching the ground. The color of the lichen was whitish yellow. Shrubs and flowers of variegated hues also adorned our path. But the almost insupportable heat was a tremendous drawback to our pleasures. We arrived at Santa Fe a little before dusk, having passed over, for this day's journey, a distance of about nine miles.

Here a new scene presented itself to our view. A large company of "arrieros" (muleteers) had already unpacked their mules, and were encamped for the night on each side of the road. On one side their cooking fires were arranged in a row under large shady trees. At each of these fires an Indian was busily engaged in preparing maize or Indian corn, for the purpose of making a kind of cake called "tortilla." These cakes are made by first crushing and then baking the corn, in the following manner: A flat stone (generally porphyry) about 15 inches wide, and 20 inches long, is placed in an inclined position by means of two legs at one end, the other end resting upon the ground. This stone is called "metate." A stone pin or roller, of a semi-cylindrical shape, about 18 inches long, serves in the hand to crush the corn upon the metate, the corn being frequently moistened with water. This roller

is called the "mano," or pestle. When the corn is completely crushed, so as to form a kind of paste, it is made into flat cakes between the hands, and baked on grating over the fire. These are tortillas, very inferior to our hoe-cakes.

On the other side of the road, in the front line, were the pack-saddles of the mules standing next to each other, in a perfect order of arrangement, each saddle being as well known by the arrieros as the men in the ranks of a military company are known to the captain. The second line was formed of the tents, or rather roofs, under which the arrieros sleep. This shelter is merely a coarse piece of sack-cloth. The next line was formed by the bales and packages of goods which they were to transport to Mexico. These were properly and carefully protected from the effects of rain by a covering of mats, which were secured by ropes on each side, fastened to wooden pins, driven into the ground, and extending the mats in such a manner as to form pent-roofs, similar to the fly of a tent. Behind these the mules, about 250 in number, feeding at several long troughs, formed the last line.

Some of the muleteers were attending to the mules; others had taken to their tents; and others were dancing, singing, gambling, drinking, and flirting with the girls. These arrieros have the universal character of being the most honest and industrious class of people of the Mexican Republic. An instance of dishonesty seldom occurs among them. Yet they are a wild looking jovial race, resembling nothing in our country. My next will be dated from Mexico.

J. P.

Railroad in Virginia.

ORANGE C. H., Va. October, 1834.

To the Editor of the Railroad Journal:

DEAR SIR,—I have noticed in the Virginia Herald a project for a railroad from Fredericksburg, or the Great Bend of the Potomac, to the Virginia Springs, through the Blue Ridge, &c. I look upon this scheme as both practicable and grand, as far as it goes. But one has only to open his eyes upon your new Railroad Map, which should be in the hands of every friend to internal improvement, in order to be convinced that if this railroad is continued on from the Virginia Springs to the ever navigable waters on the Great Bend of the Ohio at Guyandot, it at once opens the most superb highway that can possibly be constructed in the United States, to the great West. It unites the great South-west with the Atlantic in a much shorter distance than the great Erie canal; and when completed, will enable the farmers of the west to carry their corn, which now sells for 12½ cents a bushel, to the city of New-York in less than 48 hours. Besides, the public will be accommodated in carrying from the great valley of the Mississippi, and thence through Fredericksburg and Washington, Baltimore and Philadelphia, to your city, in a comparatively short period; whereas, to my knowledge, hundreds, if not thousands, have during the past

season waited at Guyandot, day after day, for want of conveyance to the White Sulphur and the northern cities. All the travel from the South-west to Washington City, during the session of Congress, will of course fall into this track, the route being nearer and quicker than any other. The inhabitants of Kanawha are now ready to do much for the construction of this road, in order to give free transport to the millions of bushels of salt now manufactured annually at their works. A few days ago I saw a merchant from near the salt works on his way to Philadelphia and New-York to buy goods, which he said he should send home by way of Pittsburg or Wheeling, and that he must wait for rains, because the Ohio was quite too low at this time, and at the best it required four weeks at least. Were the railroad of which we have been speaking completed, it would require no more than 44 or 45 hours to transport the same goods from New-York. If I had time I might mention other advantages, but I only wish to call the attention of the public to this route, and I am sure that they will at once see those advantages, and save me the trouble of mentioning them. I am glad to learn that wood for railroads can now be made durable, as it will greatly lessen the expense of excavations and embankments. In the route above mentioned, there are but few streams to cross, and the gaps through the mountains render it comparatively a level grade.

I remain, dear sir, very respectfully, yours,

J. McADAM, JR.

ON SUGAR REFINING IN FRANCE.—As it is universally known that sirops are injured and decomposed by being too long exposed to an intense heat, various means have been tried to avoid the loss thereby incurred.

The methods which have met with most approbation are, 1st, the system of evaporating by steam; 2d, the system of evaporating *in vacuo*. Both are decided improvements on the process of evaporating on the naked fire.

But through the agency of steam, the sirops can be granulated only when raised to the temperature of 237° to 240° Fahr.; and when heated to that pitch, a material portion of the sirop is still decomposed.

The granulating *in vacuo* is attended with inconveniences of another kind. That system requires a great supply of water, expensive and complicated machinery, very liable to get out of order; besides, the operation takes place in closed and air-tight vessels, and the refiner cannot keep his eye upon it to direct it properly.

Some refiners have tried the use of atmospheric air to facilitate evaporation, but they have been obliged to renounce a scheme which they could not realize.

The art of sugar refining was, then, very far

from perfection in France, when an invention, ingenious in its application, great in its results, and remarkable by its success, which daily increases, produced a complete revolution in that branch of industry.

A refiner of Lisle, Mr. Brame Chevalier, struck with the idea of using simultaneously steam for raising the sirop to the proper degree of heat, and air, heated by the same steam, to maintain the sirop in a continual agitation, conceived the possibility of obtaining by this means a very rapid and extensive evaporation at a very low temperature, thereby preserving the sirop from decomposition, and procuring a great economy of fuel and labor, and also greater returns in sugar.

This very ingenious theory has been most successfully realized. Nothing can be more perfect nor better contrived than the apparatus by which these results have been obtained.

A generator supplies the steam required to work a pump, which drives the air into a cylinder; there the steam heats the air to a proper degree; the heated air is then driven under the false bottom of a boiling pan, heated itself by steam, and escapes by small apertures through the sirop, which it causes to boil immediately.

The surplus of steam and heated air is used for warming the stove and store rooms, so that every operation of sugar refining, even that of clarifying, may be made with one boiler and one machine without the slightest danger of fire.

The boiling takes place in an instant, and as soon as the hot-air cock is opened. Evaporation takes place at 134° Fahr.; granulation is effected in eight minutes between 178° and 196° Fahr.

Martinique sugars, of the fourth quality, worked in this machine, do not produce more than six per cent. treacle, and fourteen per cent. of pale brown sugar, called in France, *Vergeoise*.

But great and important as this system is for sugar refiners, it is still more beneficial to sugar manufacturers, who extract the sugar from the beet root or the cane. It is easily conceived, as the saccharine juices, which do not weigh more than ten degrees, must be exposed much longer to the fire than the sirops proceeding from the melted sugar, which weigh generally thirty degrees. Moreover, by blowing hot air through the juices, they are purified of any unpleasant taste they may have acquired.

Finally, the advantages which account for the decided preference obtained by the system of Mr. Brame Chevalier, consist in its procuring more and finer sugar from the same quantity of raw materials of the same sort, and, moreover, in manufacturing, with greater rapidity, a superior sort of sugar.

These are positive facts, which are daily proved and verified by the great number of visitors who call at Mr. Brame Chevalier's sugar refinery at Lisle.—[Lond. Journ.]